Dressing Aids

The invention refers to dressing aids according to one of the preambles of the independent claims.

People who are unable to bend down, e.g. due to troubles with their backs, have great difficulties putting on or taking off pieces of clothing such as e.g. socks and therefore need a dressing aid to assist them or possibly actually allow them to dress independently.

A dressing aid for putting on a sock is described in U.S. patent specification No. 4,756,453. The dressing aid comprises two posts that are each provided with a loop and connected to each other by means of a hinge. To put on a sock, the latter is slipped on the two loops and subsequently stretched by spreading apart the two posts such that the foot may be slipped into the opening of the sock.

A drawback of this dressing aid is that the procedure requires a substantial effort for spreading the two posts and therefore donning a sock turns out to be difficult. Another drawback is that when the sock has been put on, the bows and the hinge are on the side of the fibula and therefore the foot needs to step over the hinge to bring the two rods to the front.

Based on this prior art, the object of the present invention is to provide a dressing aid that eliminates these drawbacks at least partly and that facilitates changing articles of clothing.

This object is attained by a dressing aid as indicated in independent claim 1. Besides another dressing aid, the remaining claims indicate preferred embodiments as well as a set of dressing aids.

The dressing aid of the invention offers the advantage that changing clothes is facilitated and in particular that the effort required for taking off resp. putting on an article of clothing is relatively small. Further advantages will be apparent from the following description.

Exemplary embodiments of the invention will be explained in more detail hereinafter with reference to the drawings, where:

Fig. 1 shows a top view of a first embodiment of a dressing aid for putting on articles of clothing having at least one opening,

Fig. 2 shows a side view of the dressing aid of Fig. 1 while putting on a sock,

Fig. 3 shows a top view of a second embodiment of a dressing aid for putting on articles of clothing having one or two openings,

Fig. 4 shows a side view of a dressing aid for taking off hosiery, and

Fig. 5 shows a front view of the dressing aid of Fig. 4.

1st Embodiment

Fig. 1 shows a first embodiment of a dressing aid in the form of a donning aid 10 that is particularly suitable for putting on hosiery such as e.g. socks.

The donning aid comprises two legs 11a and 11b that are hinged to each other by a connecting member 14. Connecting member 14 is cuboidal and comprises a recess through which the respective ends of legs 11a and 11b are passed. The ends of legs 11a and 11b are provided with respective sleeves 12a resp. 12b through which a screw extends which is fastened to connecting member 14. This support of the two legs 11a and 11b allows to open and close legs 11a and 11b, thereby forming an expanding mechanism.

Connecting member 14 further comprises two angled plastic parts 15a and 15b that are squeezed between the ends of legs 11a and 11b and the interior of connecting member 14. In this manner, the moving of legs 11a and 11b is cushioned such that they cannot loosely move back and forth when donning aid 10 is e.g. being carried about or stowed away.

Legs 11a and 11b comprise respective bows 17a and 17b having a circular cross-section to minimize the risk of injuries while putting on an article of clothing. Bows 17a and 17b together form the mounting portion, on which the article of clothing is slipped that is to be donned.

Legs 11a and 11b are each provided with two recesses 18a, 19a and 18b, 19b, respectively, in each of which a respective end of bows 17a, 17b is inserted. Bows 17a and 17b are removable, thereby facilitating storage of donning aid 10. Also it is possible to insert bows of different shapes and sizes, e.g. for a better adaptation to the shape and size of a foot or of a garment that is to be donned.

Bows 17a and 17b are essentially U-shaped as seen laterally. The height of bows 17a and 17b approximately corresponds to

the ankle level. The respective front ends 20a and 20b of bows 17a, 17b are bent at right angles approximately, so that the two bow center portions 21a and 21b, as seen from above, converge in the closed position of legs 11a and 11b and are approximately parallel in the half-open position of legs 11a and 11b.

As appears in Fig. 1, legs 11a and 11b have a slightly angled shape so that leg center portions 13a and 13b, to which bows 17a and 17b are attached, are approximately parallel to each other in the closed position of legs 11a and 11b.

By the selected shape of legs 11a and 11b and of bows 17a and 17b it is achieved that mounting portion 17a, 17b provides a uniform expansion of the openings both of garments having small openings and large openings.

Connecting member 14 is provided with one or a plurality of rectangular plates 24 each having a hole at their center and serving as locking means. Through the holes extends a screw having a rotatable wheel 25, the end of the screw engaging in a thread of connecting member 14. Plates 24 are thus rotatable about their holes and lockable in a given orientation by means of locking screw 25, thereby allowing to spread legs 11a and 11b accordingly. Thus, locked plates 24 prevent that legs 11a and 11b are folded together, when the garment is slipped on bows 17a and 17b and subsequently donned. Unfolding of legs 11a and 11b is prevented by the attached garment itself as bows 17a and 17b are under load due to its elasticity.

Since the spreading angle of legs 11a and 11b is continuously adjustable, donning aid 10 is optimally adjustable to almost any foot and almost any ankle shape. Although plates 24 prevent the folding of legs 11a and 11b, they do not prevent their unfolding. Legs 11a and 11b are therefore capable of being further expanded while putting on a garment and may thus adapt to the size of the leg up to and past the knee.

Also, instead of rectangular plates 24, a plate having an oval shape may be used such that legs 11a and 11b are more or less expanded depending on the position of the plate.

Instead of plates 24 and locking screw 25, it is also possible to use a locking member that is displaceable on an intermediate part (similar to intermediate part 66 and locking member 79 in Fig. 3) to lock legs 11a and 11b in a determined position.

It is also possible to use ratchets as locking means, the ends of legs 11a and 11b being rigidly connected to a respective ratchet such that legs 11a and 11b may not be folded under load but only unfolded. As explained below, Fig. 3 shows this variant of the locking means in the form of ratchets 82a and 82b.

Further it is conceivable to lock legs 11a and 11b in a given position by means of clamping locks.

Open ends 26a and 26b of legs 11a and 11b are rounded, e.g. by means of plastic parts that are fitted on the leg ends. The rounded ends 26a and 26b allow donning aid 10 to be moved across a surface with little resistance, so that it is

also possible e.g. for a person lying in bed to use the donning aid for putting on the piece of clothing.

Optionally, a telescopic design of open ends 26a and 26b may be provided such that legs 11a and 11b are extensible in order to be able to put on garments of larger sizes as well.

As appears in Fig. 2, a handle 28 is provided for holding and guiding donning aid 10. Handle 28 has a telescopic configuration, thereby allowing its length to be adjusted to the size of the user and locked by means of a conical rotational lock (not shown). The end of handle 28 is attachable to a connecting piece 31 that is connected to a hinge 30 and lockable by means of a quick fastener 32. It is thereby possible to remove handle 28 e.g. for stowing away donning aid 10.

As appears in Fig. 2, the lateral parts of bows 17a and 17b are arranged approximately orthogonally to legs 11a and 11b so that no parts hinder the foot while slipping into the sock.

Hinge 30 with connecting piece 31, which is connected to connecting member 14, allows to adjust the angle of inclination between handle 28 and legs 11a and 11b. A given inclination can be fixed by means of a clamping lock 33 provided on hinge 30.

Hinge 30 is preferably so designed that handle 28 may be swung down such that it will not interfere while a garment is being slipped on bows 17a, 17b. It is e.g. conceivable to use a fork joint for hinge 30 so that handle 28 is pivotable beyond 180 degrees, e.g. up to 270 degrees.

Optionally, donning aid 10 may further be provided with a catch hook 36 fastened to the head of connecting member 14 by means of an articulation 37. Catch hook 36 serves for picking up garments that are e.g. lying on the floor without need for the user to bend down. To this end, the catch hook is first flipped open, as shown by the chain dotted lines 38 in Fig. 2, moved toward the garment, and donning aid 10 is pushed against the floor such that catch hook 36 snaps shut, thereby clamping the garment.

Donning aid 10 is used for donning e.g. a sock 39 as follows. According to the size of sock 39, the spreading angle between the two legs 11a and 11b and thus between the two bow center portions 21a and 21b is adjusted by rotating plates 24 in such a manner that sock 39 may still be slipped on bows 17a and 17b but is nevertheless slightly extended. It will be noted that sock 39 is slipped on bows 17a and 17b such that the inside of sock 39 is turned outside.

Sock 39 is then pushed down until at least the ankle portion of the sock appears and essentially rests on bow center portions 21a and 21b.

Handle 28 is adjusted in length and inclination and locked. Then the user brings donning aid 10 to his foot and introduces the latter into sock 39. To assist, donning aid 10 may simultaneously be moved toward the knee, thereby unrolling sock 39 on the calf without wrinkles.

A user may apply donning aid 10 both standing up and sitting or lying down, however requiring that both hands are functioning.

Among others, donning aid 10 offers the following advantages:

Donning aid 10 may be used for putting on different kinds of garments, e.g. garments having one opening such as socks, skirts, etc., or more than one opening such as briefs, pants, etc.

Since the garment may at least partly be slipped on mounting portion 17a, 17b, it is prevented that the garment may fall down while introducing the corresponding body part. Thus, even if the foot should be a little moist, thereby making it more difficult to put on a sock, it is ensured that the sock is securely retained by mounting portion 17a, 17b while the foot is introduced and is subsequently unrolled along the leg with decreasing resistance.

The joint action of locking means 24, 25 and of expanding mechanism 11a, 11b prevents that mounting portion 17a, 17b folds together under load but does not prevent its expansion. In this manner it is achieved that a garment that is being donned is always well tensioned while mounting portion 17a, 17b may adapt to the size of the corresponding body part by its expansion.

Hinge 30 allows to swing handle 28 down so that it will not hinder the user while attaching a garment that is to be donned to mounting portion 17a, 17b. Thus, the user may e.g. place donning aid 10 on his thighs while sitting down, swing down handle 28 and squeeze it between his legs and slip the garment on mounting portion 17a, 17b. Handle 28 is subsequently swung back up for putting on the garment. This

procedure is also particularly advantageous for corpulent users.

Furthermore, with regard to expanding mechanism 11a, 11b, it is also conceivable to use donning aid 10 to assist in donning garments for the upper part of the body, such as shirts or jackets. Optionally, donning aid 10 may further be provided with additional retaining means such as clamps, thereby allowing an additional retention of a garment slipped on the mounting portion. In this case, donning aid 10 is e.g. fastened to a post so that it is positioned at a suitable height and the user may slip on the garment without bending down.

2nd embodiment

Fig. 3 shows a second embodiment of a dressing aid in the form of a donning aid 40 that is suitable for putting on pieces of clothing having one or two openings.

Similarly to the first embodiment, the donning aid according to Fig. 3 comprises two legs 41a and 41b for forming an expanding mechanism, one end of each leg being hinged to a connecting member 44. Legs 41a and 41b are interconnected by a spring 45 to prevent dangling. Legs 41a and 41b comprise respective bows 47a and 47b whose ends are inserted in circular recesses 48a, 49a and 48b, 49b of respective legs 41a, 41b. The open ends 56a and 56b of legs 41a and 41b are provided with rounded plastic parts so that they easily slide on a surface.

Undressing aid 40 further comprises a U-shaped intermediate portion 66 that is fixed to connecting member 44.

Intermediate portion 66 is provided with two bows 67a and 67b that are inserted in round recesses 68a, 69a and 68b, 69b, respectively.

Bows 47a, 47b, 67a, and 67b have a circular cross-section and are substantially U-shaped when viewed laterally.

Bows 47a and 47b on legs 41a and 41b are slightly offset from bows 67a and 67b on intermediate portion 66, as shown in Fig. 3 by chain dotted lines 46. In the case of a medium spreading angle of the two legs 41a and 41b, according to the solid lines in Fig. 3, the bow center portions 51a, 51b and 71a, 71b are at the same height approximately. Thus it is ensured that the openings e.g. of underpants mounted on bows 51a, 51b, 71a, 71b do not form a slot but are extended as evenly as possible.

Optionally, an extensible design of open ends 56a and 56b of legs 41a and 41b may be provided. Thus, as shown by the chain dotted lines 76 in Fig. 3, it is possible to lengthen legs 41a and 41b while they are widely spread for putting on garments of larger sizes. Legs 41a and 41b may further be provided with retaining clamps 77 for fastening e.g. the waistband of a pair of pants or a skirt.

Intermediate portion 66 comprises a locking member 79 which is attached to and displaceable along intermediate portion 66 and lockable by means of a clamping lock 80. The two ends of locking member 79 are provided with pins 81a and 81b on which legs 41a and 41b are resting. Depending on the position of locking member 79, legs 41a and 41b are more or less spread apart. While locking member 79 prevents that the pairs of bows 51a, 71a resp. 51b, 71b contract when a

garment is slipped on, they may still unfold. Legs 41a and 41b may thus adapt to the size of the legs while dressing aid 40 is moved up along the legs.

Fig. 3 also shows another variant of the locking means according to which the ends of legs 41a and 41b are fixed to respective ratchets 82a and 82b (toothed crown with a pawl), thereby preventing that legs 41a and 41b are folded under load. Ratchets 82a and 82b may be used in conjunction with or instead of locking member 80.

Similarly as in the first embodiment, connecting member 44 comprises a hinge 30 with a connecting piece 31 and a clamping lock 33, thereby allowing to attach a length adjustable handle by means of a quick fastener.

Mounting portion 40 illustrated in Fig. 3 comprises two pairs of bows 51a, 71a and 51b, 71b so that garments having one or two openings may be slipped on. Donning aid 40 generally allows putting on all garments for the lower part of the body, such as e.g. socks, knee-length socks, stockings, underskirts, skirts, pants, panty hoses, underpants, briefs, etc.

To put on socks, donning aid 40 is used similarly as donning aid 10 according to the first embodiment. Thus, the user slips the socks on the two pairs of bows 51a, 71a resp. 51b, 71b and steps into the opened socks with his feet.

For putting on a panty hose, for example, locking member 79 is locked in a corresponding position to spread legs 41a and 41b and the legs of the panty hose are slipped on the pairs of bows 51a, 71a and 51b, 71b about evenly until their ankle

portions are visible. Then the user introduces one leg after another into the panty hose and moves donning aid 40 toward his trunk past his knees. Since legs 41a and 41b are only resting on pins 81a and 81b, they may spread further and thereby adapt to the shape of the legs whose circumference increases upwards.

Putting on e.g. a pair of pants is achieved by spreading legs 41a and 41b according to the circumference of the pants and by slipping each of the two legs of pants on a pair of bows 51a, 71a resp. 51b, 71b. As the case may be, the leg ends 56a and 56b are extended and the waistband is additionally secured by retaining clamps 77. Then the user introduces one leg after another into the legs of pants and moves donning aid 40 upwards until he can seize the waistband with his arms.

3rd embodiment

Figures 4 and 5 show another embodiment of a dressing aid that serves for taking off e.g. a sock (undressing aid). Undressing aid 90 comprises a curved center portion 91 whose ends 92a and 92b are provided with plastic parts having a rounded shape.

Attached to center portion 91 is a connecting piece 93 having a handle 94 for holding and guiding the undressing aid screwed thereto. It is also possible to provide the center portion with a quick fastener 32 as described above such that one and the same handle 28 may be connected to dressing aids 10, 40, 90 according to the three described embodiments.

Two holders 95a and 95b that are bent forward are screwed to center portion 91. Holders 95a, 95b are connected to respective elongate guide portions 96a and 96b having an approximately mirror-symmetrical shape. Respective guide portions 96a and 96b have a substantially circular contour 97a resp. 97b in the shape of a six whose surface is curved similarly to a shoe horn. Guide portions 96a and 96b together form a guide member having a central recess 98. Also, guide portions 96a resp. 96b are mounted in a spread configuration such that they converge but a space with no material is left in the middle between the two guide portions approximately.

For removing a stocking that is being worn, guide member 96a, 96b is inserted between the leg and the stocking such that the opening of the stocking is enlarged by the spread guide portions 96a and 96b. The latter are then pushed toward the heel, recess 98 being moved along the Achilles tendon approximately while the stocking is pulled off. Since the respective lower parts of guide portions 96a and 96b are a little larger than their upper parts, the removed stocking will not fall down but remains caught on guide members 96a, 96b. Thus the stocking can be brought to the hand without the need for the user to bend down.

Suitable materials for the manufacture of dressing aids 10, 40, 90 are synthetic materials and metals while light materials are preferred to keep the mass of the dressing aids as low as possible. Handle 28 resp. 94 as well as bows 17a, 17b, 47a, 47b, 67a, and 67b are removable so that dressing aids 10, 40, 90 may be carried along (e.g. in a plane) as a compact hand luggage.

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